

What is Claimed is:

1. A manufacturing method of a thin film magnetic head comprising following steps of:

preparing an upper magnetic core,

covering an end portion of said upper magnetic core

5 with a non-magnetic protective film,

removing said non-magnetic protective film from an upper part until said upper magnetic core is exposed,

wherein a front end of a connection area in which said end portion is connected to a rear portion of said upper magnetic core is located between a face opposed to a medium and a position defining the gap depth.

2. A manufacturing method of a thin film magnetic head according to claim 1, wherein said non-magnetic protective film is removed by a polishing process or an  
15 etch-back process using dry etching.

3. A manufacturing method of a thin film magnetic head according to claim 1, wherein said non-magnetic protective film is removed by using one or more kinds of gases selected from  $CF_4$ ,  $C_4H_8$ ,  $CH_3$ ,  $BCl_3$ ,  $Cl_2$ ,  $SiCl_4$ , Ne, Ar,  
20 Kr, and Xe.